Fig. 1

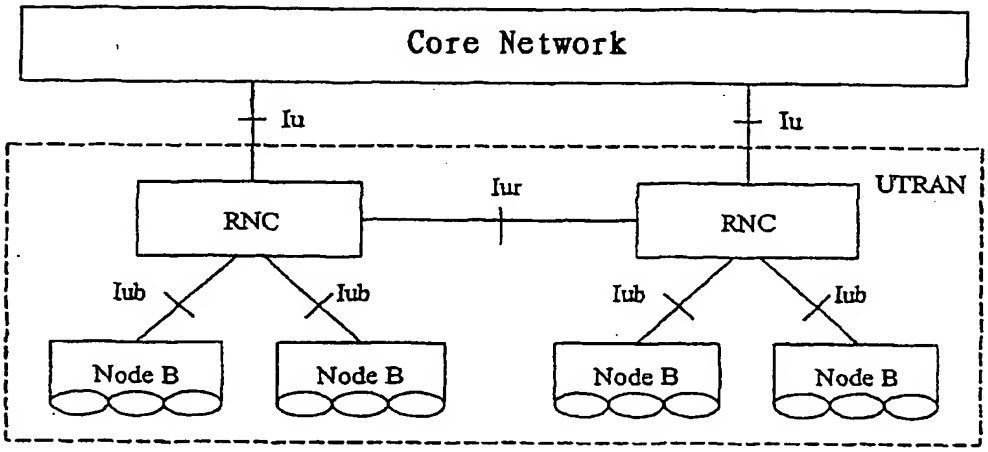
Core Network
Iu
Iu
UTRAN
RNC
Iur
RNC
Iub
Iub
Iub
Iub
Node B
Node B
Node B
Node B

Fig. 2

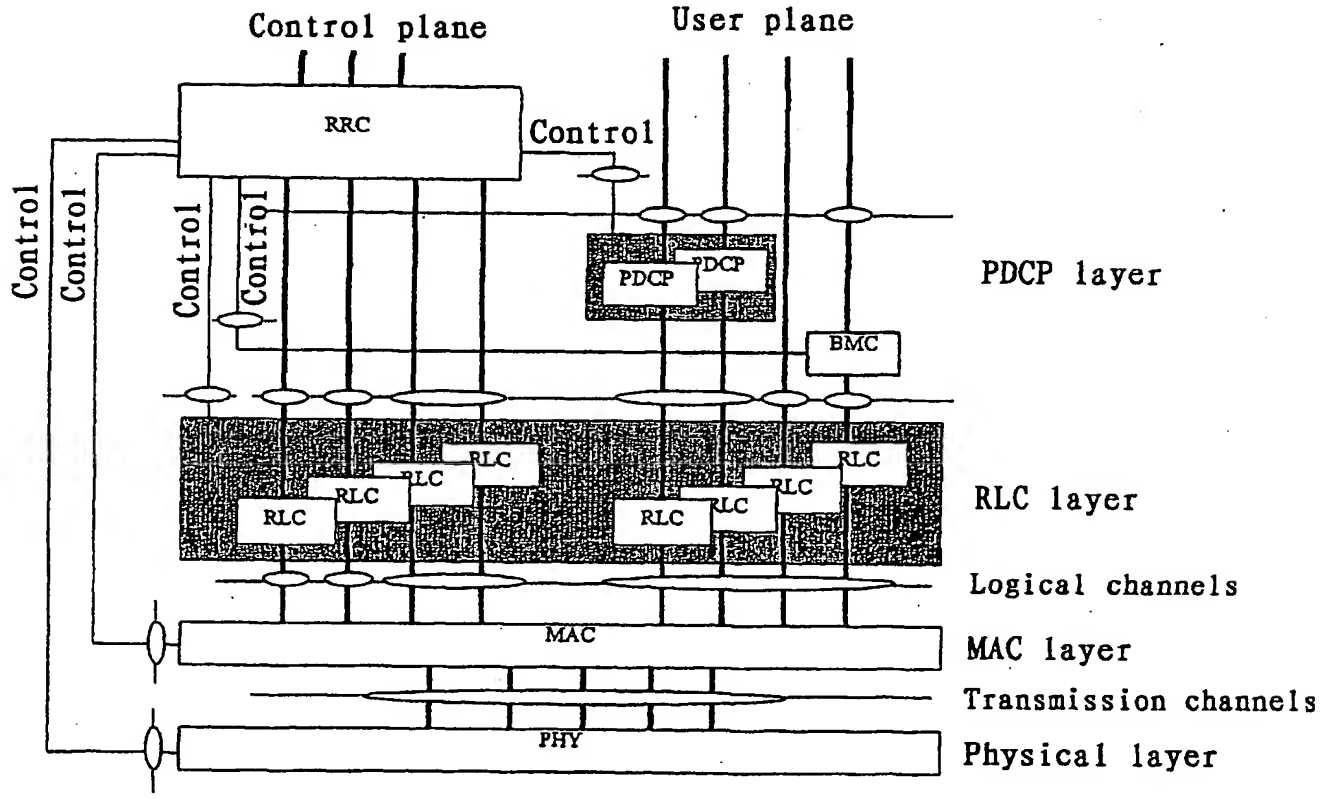

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Fig.3

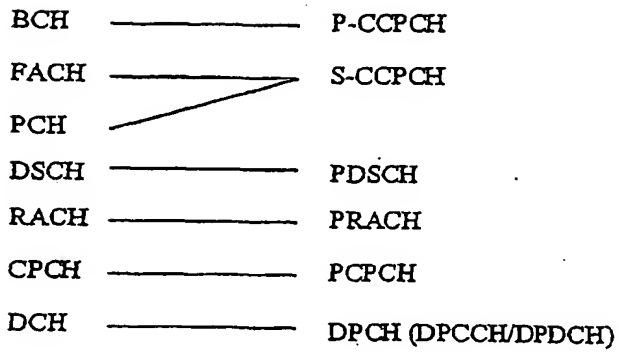
BCH
FACH
PCH
DSCH
RACH
CPCH
DCH
P-CCPCH
S-CCPCH
PDSCH
PRACH
PCPCH
DPCH (DPCCH/DPDCH)

Fig. 4

No.	Applicable Traffic type	Uplink rate (kbps)	Downlink rate (kbps)
1	Interactive/ Background	8	8
2	Interactive/ Background	32	8
3	Interactive/ Background	16	16
4	Interactive/ Background	32	32
5	Interactive/ Background	32	64
6	Interactive/ Background	64	64
7	Interactive/ Background	64	128
8	Interactive/ Background	128	128
9	Interactive/ Background	64	144
10	Interactive/ Background	144	144
11	Interactive/ Background	64	256
12	Interactive/ Background	64	384
13	Interactive/ Background	128	384
14	Interactive/ Background	384	384

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Fig. 5

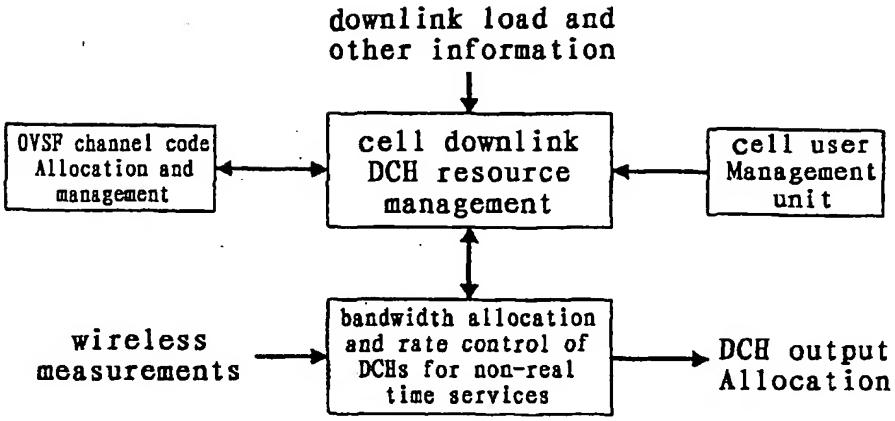

downlink load and other information
OVSF channel code Allocation and management
cell downlink DCH resource management
cell user Management unit
wireless measurements
bandwidth allocation and rate control of DCHs for non-real time services
DCH output Allocation

Fig. 6a

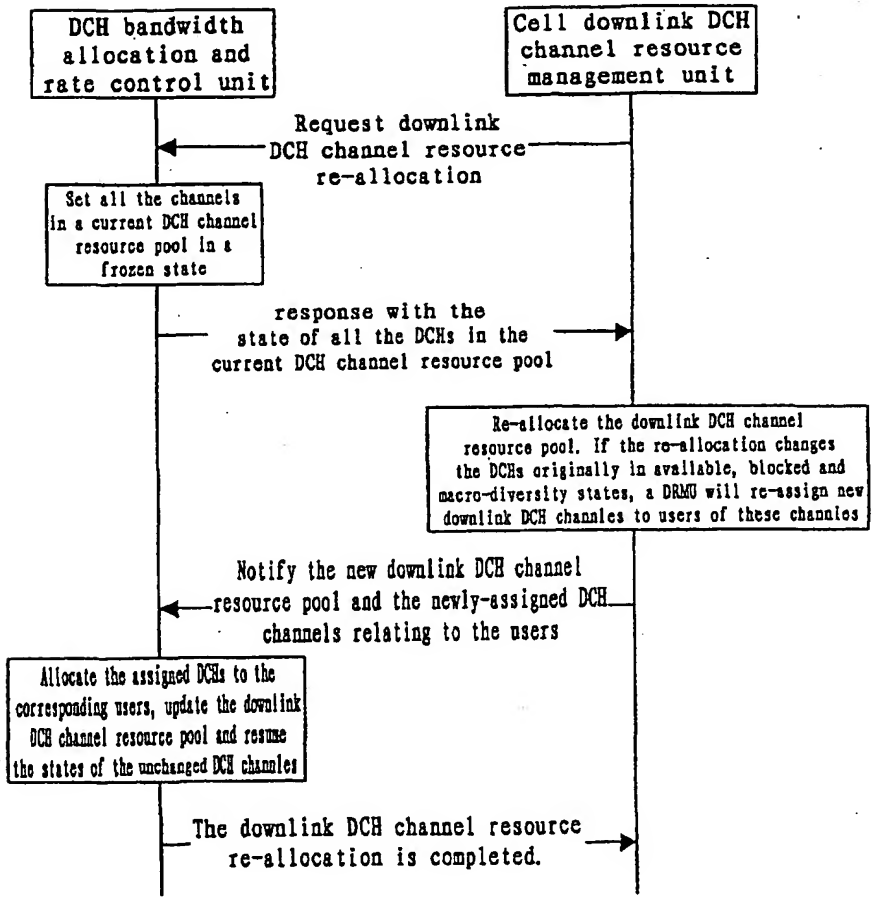

DCH bandwidth allocation and rate control unit
Cell downlink DCH channel resource management unit
Request downlink DCH channel resource re-allocation
Set all the channels in a current DCH channel resource pool in a frozen state
response with the state of all the DCHs in the current DCH channel resource pool
Re-allocate the downlink DCH channel resource pool. If the re-allocation changes the DCHs originally in available, blocked and macro-diversity states, a DRMU will re-assign new downlink DCH channles to users of these channles
Notify the new downlink DCH channel resource pool and the newly-assigned DCH channels relating to the users
Allocate the assigned DCHs to the corresponding users, update the downlink DCH channel resource pool and resume the states of the unchanged DCH channles
The downlink DCH channel resource re-allocation is completed.

Fig. 6b

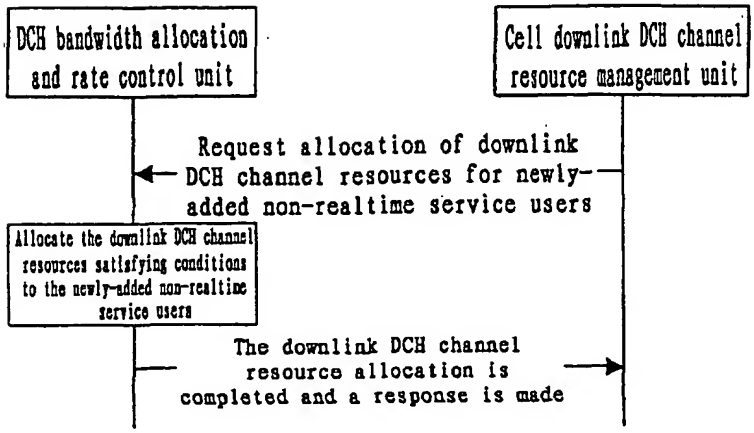

DCH bandwidth allocation and rate control unit
Cell downlink DCH channel resource management unit
Request allocation of downlink DCH channel resources for newly-added non-realtime service users
Allocate the downlink DCH channel resources satisfying conditions to the newly-added non-realtime service users
The downlink DCH channel resource allocation is completed and a response is made

Fig. 7

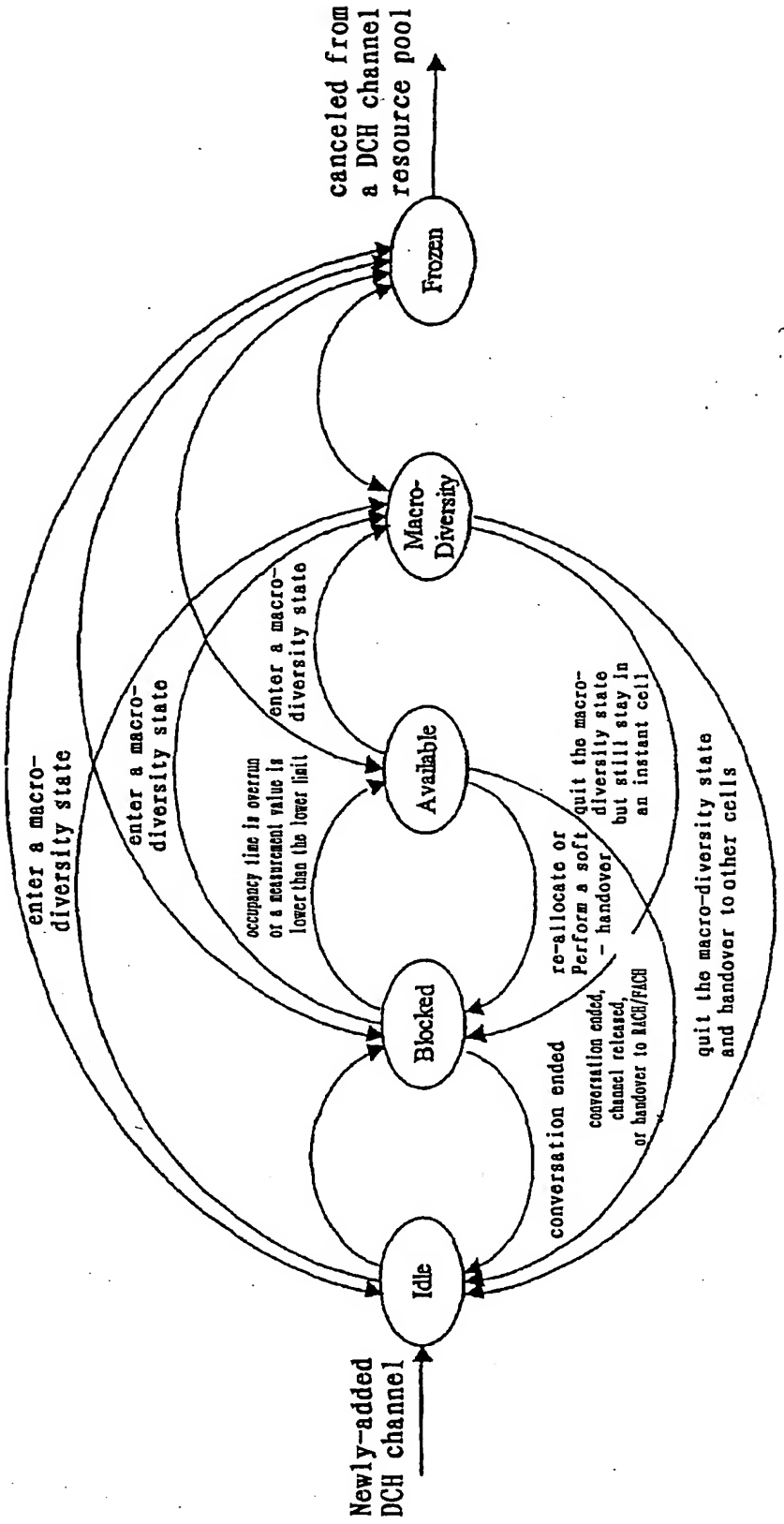

canceled from a DCH channel resource pool
Frozen
Macro-Diversity
Available
Blocked
Idle
Newly-added DCH channel
enter a macro-diversity state
enter a macro-diversity state
enter a macro-diversity state
occupancy time is overrun or a measurement value is lower than the lower limit
re-allocate or Perform a soft - handover
quit the macro-diversity state but still stay in an instant cell
conversation ended
conversation ended, channel released, or handover to RACH/FACH
quit the macro-diversity state and handover to other cells

Fig. 8

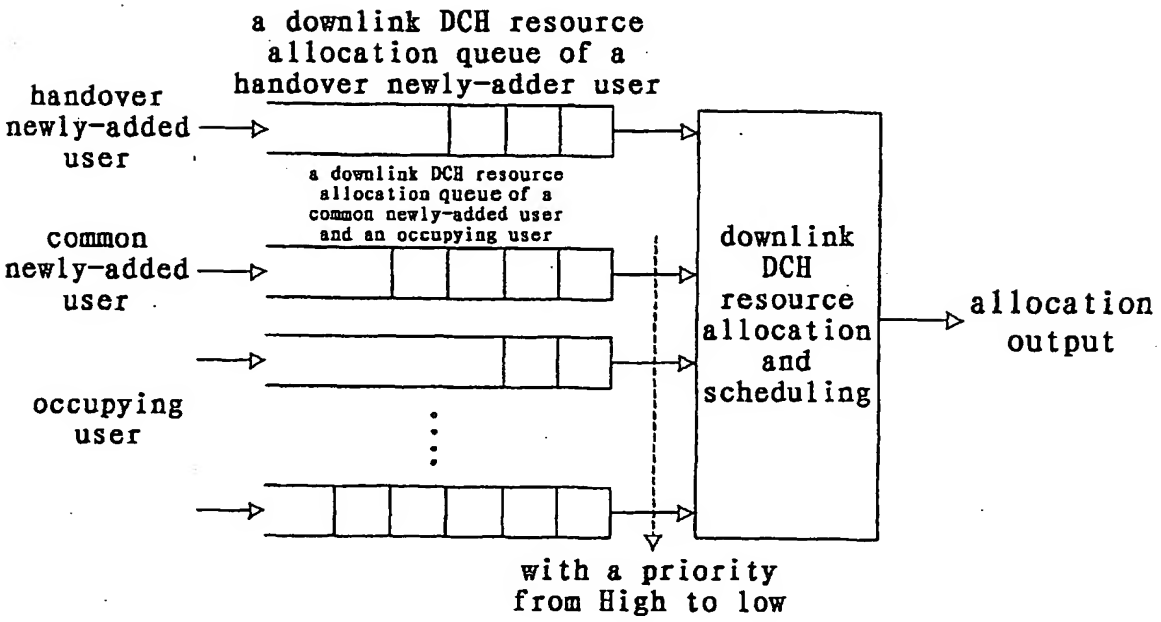

a downlink DCH resource allocation queue of a handover newly-adder user
handover newly-added user
a downlink DCH resource allocation queue of a common newly-added user and an occupying user
common newly-added user
occupying user
downlink DCH resource allocation and scheduling
allocation output
with a priority from High to low

Fig. 9a

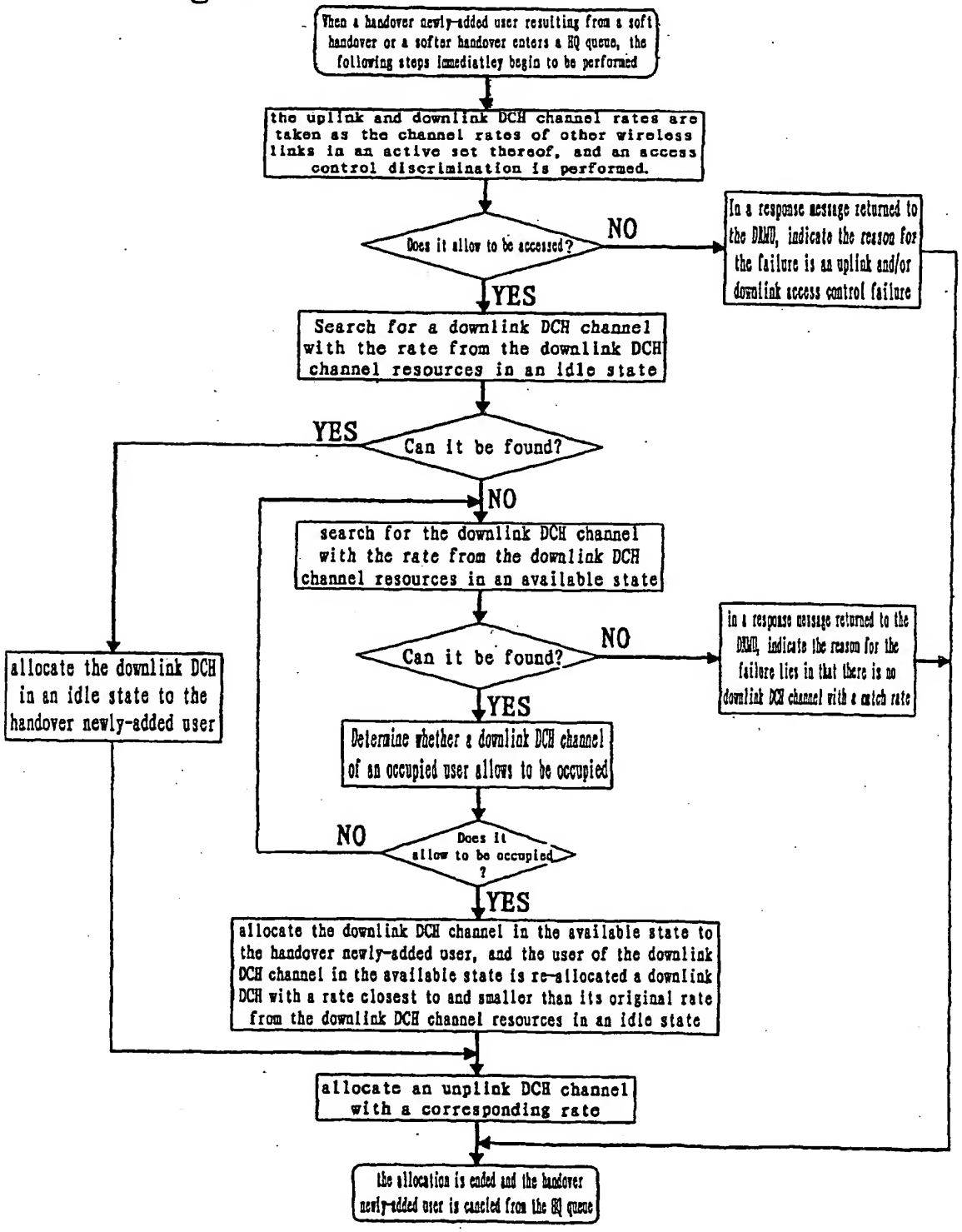

When a handover newly-added user resulting from a soft handover or a softer handover enters a HQ queue, the following steps immediatley begin to be performed
the uplink and downlink DCH channel rates are taken as the channel rates of other wireless links in an active set thereof, and an access control discrimination is performed.
Does it allow to be accessed?
NO
In a response message returned to the DRNC, indicate the reason for the failure is an uplink and/or downlink access control failure
YES
Search for a downlink DCH channel with the rate from the downlink DCH channel resources in an idle state
YES
Can it be found?
NO
search for the downlink DCH channel with the rate from the downlink DCH channel resources in an available state
Can it be found?
NO
in a response message returned to the DRNC, indicate the reason for the failure lies in that there is no downlink DCH channel with a match rate
YES
allocate the downlink DCH in an idle state to the handover newly-added user
Determine whether a downlink DCH channel of an occupied user allows to be occupied
NO
Does it allow to be occupied ?
YES
allocate the downlink DCH channel in the available state to the handover newly-added user, and the user of the downlink DCH channel in the available state is re-allocated a downlink DCH with a rate closest to and smaller than its original rate from the downlink DCH channel resources in an idle state
allocate an unplink DCH channel with a corresponding rate
the allocation is ended and the handover newly-added user is cancled from the HQ queue

Fig. 9b

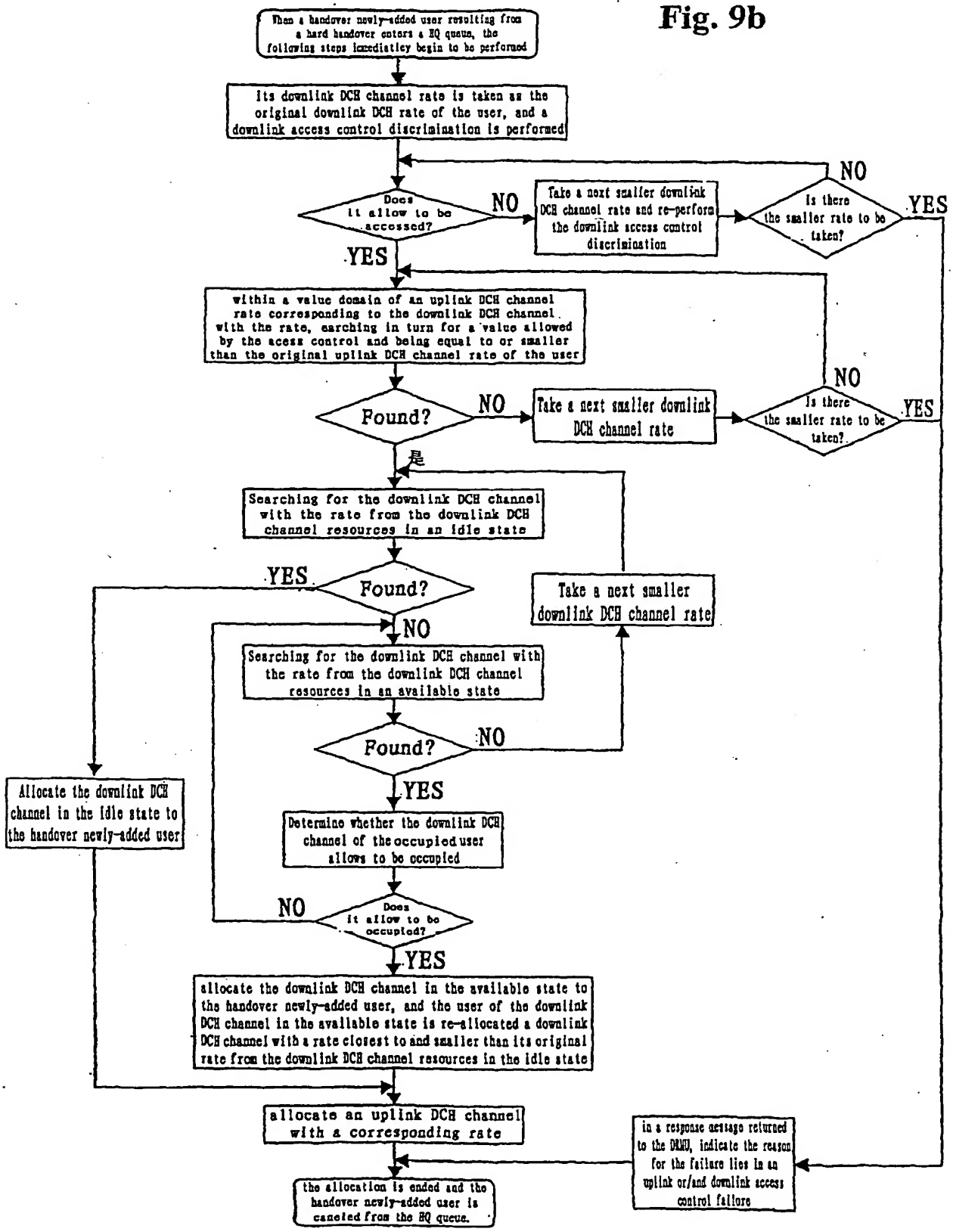

When a handover newly-added user resulting from a hard handover enters a HQ queue, the following steps immediatley begin to be performed
Its downlink DCH channel rate is taken as the original downlink DCH rate of the user, and a downlink access control discrimination is performed
Does it allow to be accessed?
NO
Take a next smaller downlink DCH channel rate and re-perform the downlink access control discrimination
Is there the smaller rate to be taken?
NO
YES
YES
within a value domain of an uplink DCH channel rate corresponding to the downlink DCH channel with the rate, earching in turn for a value allowed by the acess control and being equal to or smaller than the original uplink DCH channel rate of the user
Found?
NO
Take a next smaller downlink DCH channel rate
Is there the smaller rate to be taken?
NO
YES
是
Searching for the downlink DCH channel with the rate from the downlink DCH channel resources in an idle state
YES
Found?
Take a next smaller downlink DCH channel rate
NO
Searching for the downlink DCH channel with the rate from the downlink DCH channel resources in an available state
Found?
NO
YES
Allocate the downlink DCH channel in the idle state to the handover newly-added user
Determine whether the downlink DCH channel of the occupied user allows to be occupied
NO
Does it allow to be occupied?
YES
allocate the downlink DCH channel in the available state to the handover newly-added user, and the user of the downlink DCH channel in the available state is re-allocated a downlink DCH channel with a rate closest to and smaller than its original rate from the downlink DCH channel resources in the idle state
allocate an uplink DCH channel with a corresponding rate
in a response message returned to the DRNC, indicate the reason for the failure lies in an uplink or/and downlink access control failure
the allocation is ended and the handover newly-added user is canceled from the HQ queue.

Fig. 9c

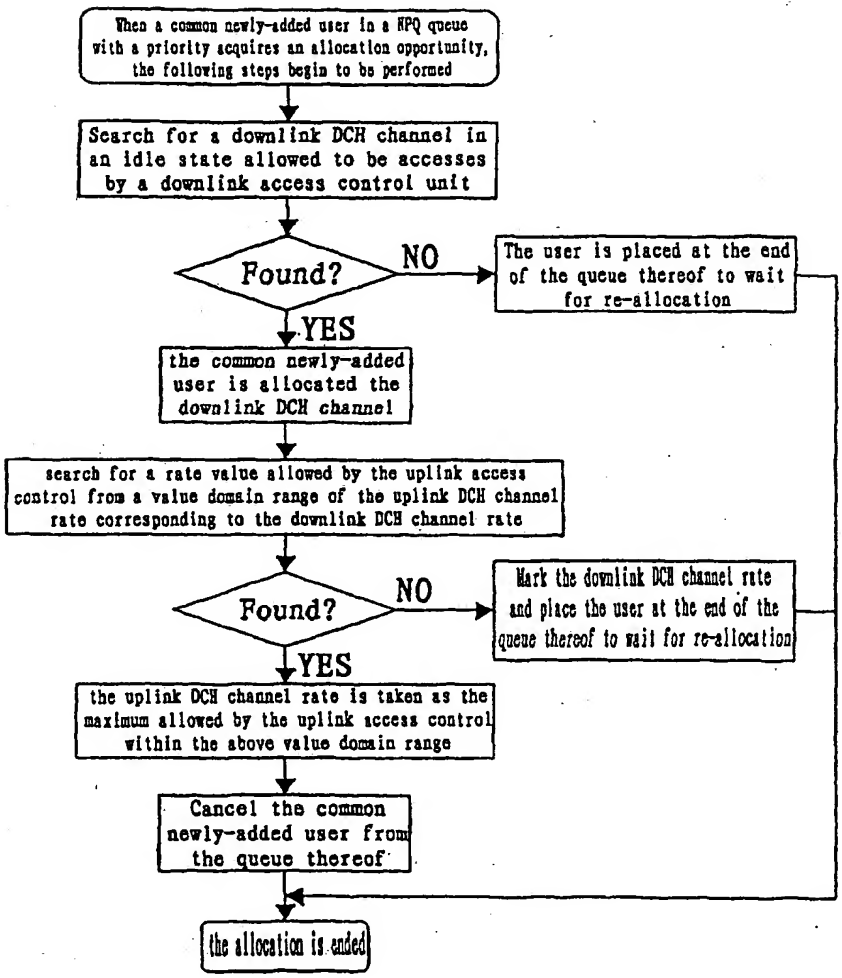
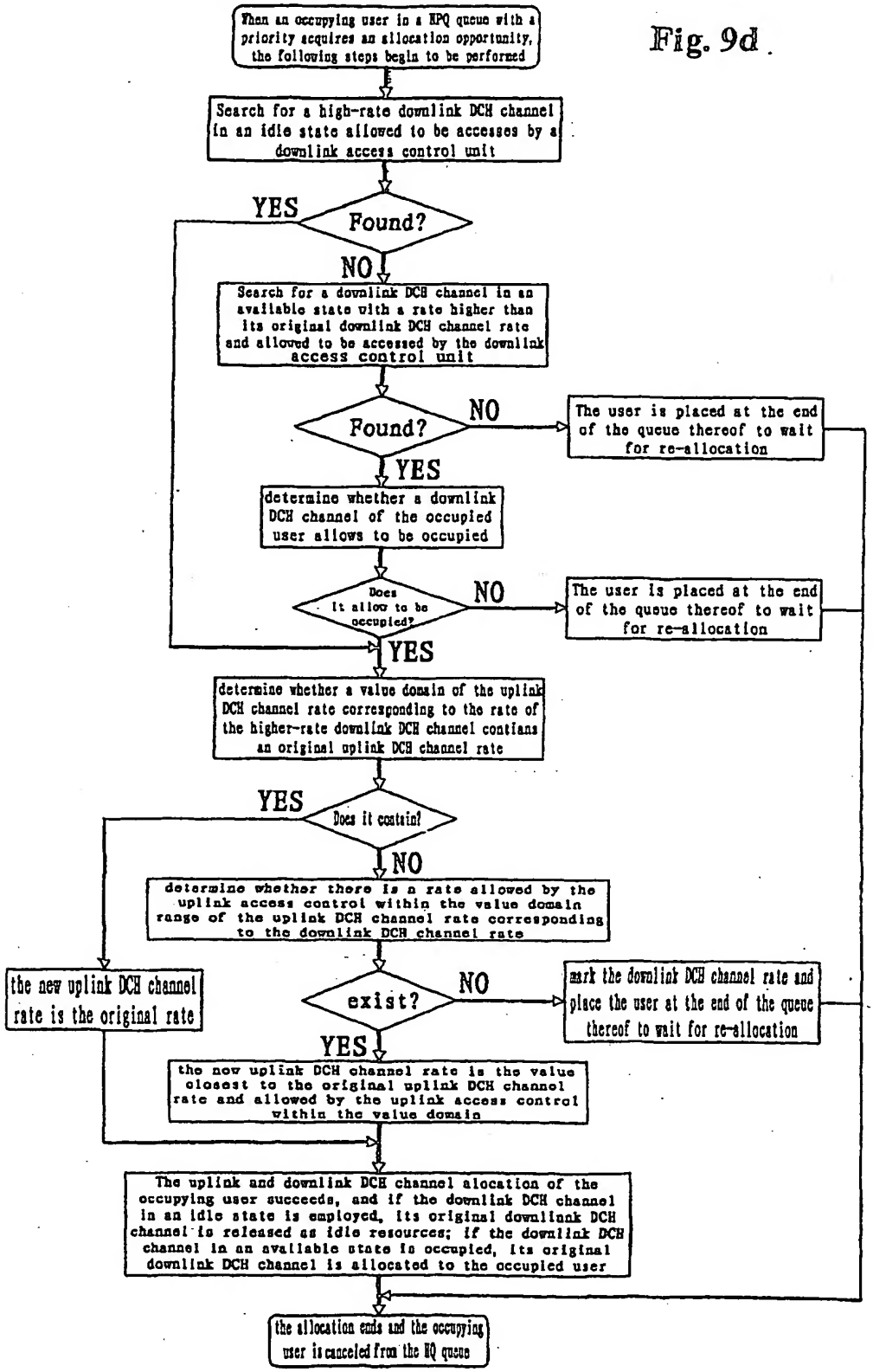

When a common newly-added user in a HPQ queue with a priority acquires an allocation opportunity, the following steps begin to be performed
Search for a downlink DCH channel in an idle state allowed to be accesses by a downlink access control unit
Found?
NO
The user is placed at the end of the queue thereof to wait for re-allocation
YES
the common newly-added user is allocated the downlink DCH channel
search for a rate value allowed by the uplink access control from a value domain range of the uplink DCH channel rate corresponding to the downlink DCH channel rate
Found?
NO
Mark the downlink DCH channel rate and place the user at the end of the queue thereof to wait for re-allocation
YES
the uplink DCH channel rate is taken as the maximum allowed by the uplink access control within the above value domain range
Cancel the common newly-added user from the queue thereof
the allocation is ended

Fig. 9d


When an occupying user in a HPQ queue with a priority acquires an allocation opportunity, the following steps begin to be performed
Search for a high-rate downlink DCH channel in an idle state allowed to be accesses by a downlink access control unit
YES
Found?
NO
Search for a downlink DCH channel in an available state with a rate higher than its original downlink DCH channel rate and allowed to be accessed by the downlink access control unit
Found?
NO
The user is placed at the end of the queue thereof to wait for re-allocation
YES
determine whether a downlink DCH channel of the occupied user allows to be occupied
Does it allow to be occupied?
NO
The user is placed at the end of the queue thereof to wait for re-allocation
YES
determine whether a value domain of the uplink DCH channel rate corresponding to the rate of the higher-rate downlink DCH channel contians an original uplink DCH channel rate
YES
Does it contain?
NO
determine whether there is a rate allowed by the uplink access control within the value domain range of the uplink DCH channel rate corresponding to the downlink DCH channel rate
the new uplink DCH channel rate is the original rate
exist?
NO
mark the downlink DCH channel rate and place the user at the end of the queue thereof to wait for re-allocation
YES
the new uplink DCH channel rate is the value closest to the original uplink DCH channel rate and allowed by the uplink access control within the value domain
The uplink and downlink DCH channel alocation of the occupying user succeeds, and if the downlink DCH channel in an idle state is employed, its original downlink DCH channel is released as idle resources; if the downlink DCH channel in an available state is occupied, its original downlink DCH channel is allocated to the occupied user
the allocation ends and the occupying user is canceled from the HQ queue